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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,018	02/07/2002	Hui Su	S01.12-0869	8761
7590	12/01/2004		EXAMINER	
Todd R. Fronek WESTMAN CHAMPLIN & KELLY International Centre - Suite 1600 900 South Second Avenue Minneapolis, MN 55402-3319			TORRES, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2133	
DATE MAILED: 12/01/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/071,018	SU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 28 September 2004.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 07 February 2002 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claims 18-20 filed 09/28/2004 have been fully considered but they are not persuasive.

The Applicant contends, "As discussed above, Satoh describes that data is read, and errors tracked, one track at a time. Further, Satoh describes that data of a defective track is corrected and written on a separate portion of the disc. Therefore, these elements of the prior art do not perform the function recited in independent claim 18". The Examiner does not see how any of the Applicant's recited argument conflicts with any of claim 18. Nonetheless, the arguments are incorrect. Col. 4, lines 17-39 in Satoh teach that data is read, and errors tracked, one sector at a time by sector address. Col. 4, lines 14-16 in Satoh teach that data of a defective sector is corrected and written to an alternate sector. However claim 18 has no limitation with regard to writing data to sectors since claim 18 only claims "writing information to the storage medium.

The Examiner disagrees with the applicant and maintains all rejections of claims 18-20. All amendments and arguments by the applicant have been considered. It is the

Examiner's conclusion that claims 18-20 are not patentably distinct or non-obvious over the prior art of record in view of the reference, Satoh as applied in the last office action, filed 06/28/2004. Therefore, the rejection is maintained.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Satoh; Isao et al. (US 5469418 A, hereafter referred to as Satoh).

See the Non-Final Action filed 06/28/2004 for detailed action of prior rejections.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2, 6-11 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura; Ryuichi (US 5677901 A) in view of Satoh; Isao et al. (US 5469418 A, hereafter referred to as Satoh).

35 U.S.C. 103(a) rejection of claim 1.

Iwamura teaches determining a number of sectors to be read from the storage medium (col. 10, lines 3-21 in Iwamura teaches determining a number L of sectors to be read from the storage medium at sector address X+1 to X+L); reading data from all sectors of the number of sectors during a first operation of the data storage system (col 10, lines 7-10 in Iwamura teach error correction is performed by reading the data that was just written to sector addresses X+1 to X+L, hence Iwamura teaches reading data from all sectors of the L sectors at sector address X+1 to X+L during a first operation of the data storage system); identifying error sectors; correcting the data from the error sectors (col. 4, lines 13-16 in Iwamura teaches error correction processing; Note: error correction processing is a step for identifying error sectors and correcting the data from the error sectors); and writing corrected data to the error sectors during a second operation of the data storage system (col. 4, lines 16-21 in Iwamura teaches writing corrected data to the error sectors during a second operation of the data storage system).

However Iwamura does not explicitly teach the specific use of identifying error sectors having a number of errors above a predetermined threshold.

Satoh, in an analogous art, teaches use of identifying error sectors having a number of errors above a predetermined threshold (col. 4, lines 2-16 in Satoh teach that after the track is read the track is monitored to verify if the number of errors in a sector exceeds a prescribed number threshold of allowable errors; hence Satoh teaches identifying the number of errors in a sector of a track having a number of errors above a predetermined threshold).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Iwamura with the teachings of Satoh by including use of identifying error sectors having a number of errors above a predetermined threshold.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of identifying error sectors having a number of errors above a predetermined threshold would have provided the opportunity to write data to an alternative sector as taught in Satoh (col. 4, lines 14-16 in Satoh).

35 U.S.C. 103(a) rejection of claim 2.

Col. 1, lines 17-20 in Satoh teach counting the number of errors, which is step for tracking errors.

35 U.S.C. 103(a) rejection of claims 6 and 7.

Col. 4, lines 3-6 and Figures 1 and 3 in Satoh teach that the written sectors are read in an intermediate revolution occurring between the first write revolution and a revolution for data to be rewritten.

35 U.S.C. 103(a) rejection of claim 8.

Buffer memories RAM-1 and RAM-2 in Figure 2 of Satoh store data during read.

35 U.S.C. 103(a) rejection of claim 9.

See ECC-1 and ECC-2 in Figure 2 of Satoh.

35 U.S.C. 103(a) rejection of claim 10.

Satoh teaches a rotating disc having a disc surface; a transducer configured to read and write data from the disc surface; a buffer memory; and a controller (see Figure 2 in Satoh). Iwamura teaches determining a number of sectors to be read from the storage medium (col. 10, lines 3-21 in Iwamura teaches determining a number L of sectors to be read from the storage medium at sector address X+1 to X+L); reading data from all sectors of the number of sectors during a first operation of the data storage system (col 10, lines 7-10 in Iwamura teach error correction is performed by reading the data that was just written to sector addresses X+1 to X+L, hence Iwamura teaches reading data from all sectors of the L sectors at sector address X+1 to X+L during a first operation of the data storage system); identifying error sectors; correcting the data from the error sectors (col. 4, lines 13-16 in Iwamura teaches error correction processing; Note: error

correction processing is a step for identifying error sectors and correcting the data from the error sectors); and writing corrected data to the error sectors during a second operation of the data storage system (col. 4, lines 16-21 in Iwamura teaches writing corrected data to the error sectors during a second operation of the data storage system).

However Iwamura does not explicitly teach the specific use of identifying error sectors having a number of errors above a predetermined threshold.

Satoh, in an analogous art, teaches use of identifying error sectors having a number of errors above a predetermined threshold (col. 4, lines 2-16 in Satoh teach that after the track is read the track is monitored to verify if the number of errors in a sector exceeds a prescribed number threshold of allowable errors; hence Satoh teaches identifying the number of errors in a sector of a track having a number of errors above a predetermined threshold).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Iwamura with the teachings of Satoh by including use of identifying error sectors having a number of errors above a predetermined threshold.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of identifying error sectors having a number of errors above a predetermined threshold would have provided the opportunity to write data to an alternative sector as taught in Satoh (col. 4, lines 14-16 in Satoh).

35 U.S.C. 103(a) rejection of claim 11.

Col. 1, lines 17-20 in Satoh teach counting the number of errors, which is step for tracking errors.

35 U.S.C. 103(a) rejection of claim 15.

Col. 4, lines 3-6 and Figures 1 and 3 in Satoh teach that the written sectors are read in an intermediate revolution occurring between the first write revolution and a revolution for data to be rewritten.

35 U.S.C. 103(a) rejection of claim 16.

See ECC-1 and ECC-2 in Figure 2 of Satoh.

35 U.S.C. 103(a) rejection of claim 17.

Buffer memories RAM-1 and RAM-2 in Figure 2 of Satoh store data during read.

4. Claims 3-5 and 12-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura; Ryuichi (US 5677901 A) and Satoh; Isao et al. (US 5469418 A, hereafter referred to as Satoh).

35 U.S.C. 103(a) rejection of claims 3-5 and 12-14.

Satoh substantially teaches the claimed invention described in claims 1, 2, 10 and 11 (as rejected above). Note: Col. 4, lines 1-16 in Satoh is substantially a masking means

for correcting and rewriting a sector of a track and Buffer memories RAM-1 and RAM-2 store Masking information on particular sectors to be written to during error correction. However Satoh does not explicitly teach the specific use of a mask.

The Examiner asserts that Col. 4, lines 1-16 in Satoh is substantially a masking means for correcting and rewriting a sector of a track and that using a mask to implement an alternative embodiment of the teachings taught in the Satoh patent would have been an obvious engineering design choice based on hardware and software requirements of the design.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Satoh by including use of a mask. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a mask would have provided the opportunity to implement an alternative embodiment the design taught in Satoh based on obvious engineering design choice such as hardware and software requirements of the design.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph D. Torres, PhD  
Primary Examiner  
Art Unit 2133

